



IUPAC

Pure and Applied Chemistry

**VOL.
55
1983**

**Official Journal of the
International Union of Pure
and Applied Chemistry**

**Volume Contents and
Author and Subject Indexes**

**Volume 55
1983**



Pergamon

PURE and APPLIED CHEMISTRY

Official Journal of the
International Union of Pure and Applied Chemistry

President: W. G. SCHNEIDER (Canada)
Vice-President: C. N. R. RAO (India)

Secretary-General: T. S. WEST (UK)
Treasurer: W. GRAULICH (Federal Republic
of Germany)

IUPAC Committee on Publications

Chairman: D. P. DEN OS (Netherlands) ● S. MARIČIĆ (Yugoslavia)
T. H. G. MICHAEL (Canada) ● B. MUNSCH (France) ● D. A. O'SULLIVAN (USA)
I. A. WILLIAMS (UK)

Executive Editor

P. D. GUJRAL, IUPAC Secretariat,
Bank Court Chambers, 2-3 Pound Way, Cowley Centre, Oxford OX4 3YF (UK)
Telephone: 0865 717744, International dialling: +44 865 717744
Telegrams: IUPAC OXFORD. Telex: 83147 attn. IUPAC

Copyright © 1983 International Union of Pure and Applied Chemistry

Requests for permission to reproduce material from the Journal should be addressed to the
IUPAC Secretariat

It is a condition of publication that manuscripts submitted to this journal have not been published and will not be simultaneously submitted or published elsewhere. By submitting a manuscript, the authors agree that the copyright for their article is transferred to IUPAC if and when the article is accepted for publication. However, assignment of copyright is not required from authors who work for organisations which do not permit such assignment. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform or any other reproductions of similar nature and translations. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, electrostatic, magnetic tape, mechanical, photocopying, recording or otherwise, without permission in writing from the copyright holder.

Photocopying Information for Users in the USA

The Item-Fee Code for this publication indicates that authorization to photocopy items for internal or personal use is granted by the copyright holder for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service provided the stated fee for copying beyond that permitted by Section 107 or 108 of the United States Copyright Law is paid. The appropriate remittance of \$3.00 per copy per article is paid directly to the Copyright Clearance Center Inc., 21 Congress Street, Salem, MA 01970. The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the copyright holder for such copying. In case of doubt please contact your nearest Pergamon office.

The Item-Fee Code for this publication is: 0033-4545/83 \$3.00 + 0.00

Annual Subscription Rate 1984. One volume, Twelve Issues, US \$500.00 (1984-85 rate, US \$950.00) (including postage and insurance). Any individual whose institution takes out a library subscription may purchase a second or additional subscription for personal use at the reduced rate of US \$70 *per annum*. Subscription enquiries from customers in North America should be sent to: Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523, USA, and for the remainder of the world to: Pergamon Press Ltd, Headington Hill Hall, Oxford OX3 0BW, UK.

Microform Subscriptions and Back Issues. Back issues of all previously published volumes are available in the regular editions and on microfilm and microfiche. Current subscriptions are available on microfiche simultaneously with the paper edition and on microfilm at the end of the subscription year.



Pergamon Press

Headington Hill Hall, Oxford

Maxwell House, Fairview Park, New York

Oxford

New York

Paris

Frankfurt

Volume Contents

January

Plenary and section plenary lectures presented at the XXII International Conference on Coordination Chemistry held in Budapest, Hungary, 23-27 August 1982*

C. Floriani*	1	Interaction of small molecules with metal centers: the role of modeling studies
V. I. Goldanskii*	11	Kinetics of the fast charge and spin relaxation of coordination compounds studied by the Mössbauer Emission Spectroscopy
D. W. Margerum*	23	Metal peptide complexes
R. J. P. Williams*	35	The symbiosis of metal ion and protein chemistry
U. Belluco, B. Crociani, R. Michelin and P. Uguagliati	47	Electrophilic and nucleophilic attacks on alkyl, nitrile, and isonitrile complexes of Pd(II) and Pt(II)
M. J. Blandamer and J. Burgess	55	Solvent and pressure effects on kinetics of reactions of complexes
J. Gažo, R. Boča, E. Jóna, M. Kabešová, L. Macášková and J. Šima	65	Equatorial-axial interactions: a more integral approach to the problems of mutual influence of ligands in complexes
N. N. Greenwood	77	Metalloborane cluster compounds
A. Haim	89	Intramolecular electron transfer
J. Halpern	99	Mechanism and stereochemistry of asymmetric catalysis by metal complexes
H. Kozłowski, G. Formicka-Kozłowska and L. D. Pettit	107	Metal ion interaction with natural oligopeptides
I. N. Marov	115	Study of equilibria and kinetics of ligand exchange reactions of coordination compounds in solution by electron spin resonance
A. E. Martell	125	Oxidation of organic substrates with dioxygen complexes as intermediates
H. Sigel	137	Comparison of the metal ion promoted dephosphorylation of adenosine 5'-triphosphate and uridine 5'-triphosphate

T. G. Spiro and J. Turner	145	Heme protein structure and dynamics, studied by Resonance Raman Spectroscopy
M. Tanaka	151	Kinetics of metalloporphyrin formation with particular reference to the metal ion assisted mechanism
M. M. Taqui Khan	159	Dioxygen complexes of ruthenium
R. Taube	165	New results in the coordination chemistry of σ -bonded carbanionic ligands

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

Commission on Polymer Characterization and Properties (F. N. Cogswell)	177	Influence of acrylic processing aids on the rheology and structure of polyvinyl chloride
---	-----	--

February

Plenary lectures presented at the International Symposium on Theoretical Organic Chemistry held in Dubrovnik, Croatia, Yugoslavia, 30 August–3 September 1982

N. L. Allinger and Y. H. Yuh	191	Bicyclo(6.2.0)decapentaene
A. T. Balaban	199	Topological indices based on topological distances in molecular graphs
M. V. Basilevsky	207	Topography of potential energy surfaces
V. Bonačić-Koutecký	213	On avoided crossing between molecular excited states; photochemical implications
D. Bonchev	221	Principles of a novel nomenclature of organic compounds
N. D. Epiotis	229	Applications of molecular orbital-valence bond theory in chemistry
R. Gleiter and M. C. Böhm	237	Regio- and stereoselectivity in Diels–Alder reactions. Theoretical considerations
Z. R. Grabowski and J. Dobkowski	245	Twisted intramolecular charge transfer (TICT) excited states: energy and molecular structure
B. A. Hess, Jr., L. J. Schaad and P. Čársky	253	Theoretical vibrational spectra as a tool in the identification of unusual organic molecules

G. Hohlneicher and B. Dick	261	New experimental information from two-photon spectroscopy and comparison with theory
H. Hosoya, M. Shobu, K. Takano and Y. Fujii	269	Revisit to the electron density, bond order, and aromaticity
K. N. Houk	277	Theoretical studies of the stereoselectivities of organic reactions
Y.-s. Kiang and E.-t. Chen	283	Evaluation of HOMO-LUMO separation and homologous linearity of conjugated molecules
L. Klasinc, B. Kovač and H. Güsten	289	Photoelectron spectra of acenes. Electronic structure and substituent effects
D. J. Klein	299	Valence bond theory for conjugated hydrocarbons
Z. B. Maksić	307	Variable hybridisation—a simple model of covalent bonding
J. Michl, G. J. Radziszewski, J. W. Downing, K. B. Wiberg, F. H. Walker, R. D. Miller, P. Kovacic, M. Jawdosiuik and V. Bonačić-Koutecký	315	Highly strained single and double bonds
I. Murata	323	Charge transfer transition for symmetry-forbidden charge transfer interaction. Theory and experimental verification
C. Párkányi	331	Aromatic photosubstitutions
J. A. Pople	343	Potential surfaces for simple rearrangements
M. Randić	347	On the role of kekule valence structures
P. von Ragué Schleyer	355	Lithium synthetic reagents: dimerization and intramolecular association. Double bridging in "dianions"
L. T. Scott	363	The quinones of azulene. Experimental tests of theoretical predictions
P. J. Stang	369	Properties and reactions of unsaturated carbenes
D. E. Sunko	375	The role of theory in teaching organic chemistry
N. Trinajstić, Ž. Jeričević, J. V. Knop, W. R. Müller and K. Szymanski	379	Computer generation of isomeric structures
R. Zahradník	391	Quantum chemical and statistical-thermodynamic studies of equilibria and rates

H. Zollinger

- 401 Mechanistic investigations on reactions of molecular nitrogen with organic species

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

Commission on Nomenclature of Organic Chemistry
(W. H. Powell)

- 409 Revision of the extended Hantzsch-Widman system of nomenclature for heteromonocycles

March

Plenary lectures, and Rossini lecture, presented at the Twelfth International Conference on Chemical Thermodynamics held under the auspices of the IUPAC Commission on Thermodynamics at University College London, U.K., 6-10 September 1982*

M. Månsson

- 417 Thermochemistry—some recent lines of development

H. Suga

- 427 Ordering processes in some disordered systems

J. M. H. Levelt Sengers

- 437 The state of the critical state of fluids

C. M. Knobler

- 455 Twixt cup and lip: do equation-of-state measurements really tell us anything useful about intermolecular forces?

K. N. Marsh

- 467 Thermodynamics of liquid mixtures

G. M. Schneider

- 479 Fluid mixtures at high pressures

L. G. Hepler

- 493 Thermodynamics of dilute solutions

M. Gaune-Escard

- 505 Thermodynamic models of molten salt mixtures

I. Wadsö

- 515 Biothermodynamics and calorimetric methods

C. B. Alcock

- 529 Solution models and patterns in alloy thermodynamics

E. F. Westrum, Jr.*

- 539 From bixbyite to Schottky and back again (Progress in the morphology of heat-capacity curves or Schottky contributions for chemists)

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

Commission on Analytical Reactions and Reagents
(G. den Boef and A. Hulanicki)

- 553 Recommendations for the usage of selective, selectivity and related terms in analytical chemistry

Commission on Teaching of Clinical Chemistry
(C. J. Porter and D. H. Curnow)

- 557 A scheme for a two year postgraduate course in clinical chemistry

April

Plenary lectures presented at the Eleventh International Carbohydrate Symposium held at the University of British Columbia, Vancouver, Canada, 22-28 August 1982

- | | | |
|---|-----|--|
| R. J. Ferrier and P. Prasit | 565 | Routes to prostaglandins from sugars |
| E. Goldsmith and
R. J. Fletterick | 577 | Oligosaccharide conformation and protein sac-
charide interactions in solution |
| K. B. Sharpless, C. H. Behrens,
T. Katsuki, A. W. M. Lee,
V. S. Martin, M. Takatani,
S. M. Viti, F. J. Walker and
S. S. Woodard | 589 | Stereo and regioselective openings of chiral
2,3-epoxy alcohols. Versatile routes to optically
pure natural products and drugs. Unusual kinetic
resolutions |
| K. Bock | 605 | The preferred conformation of oligosaccharides
in solution inferred from high resolution NMR
data and hard sphere exo-anomeric calculations |
| E. De Clercq | 623 | Antiviral activity of 5-substituted pyrimidine
nucleoside analogues |
| H. Geyer, K. Himmelsbach,
B. Kwiatkowski, S. Schlecht
and S. Stirm | 637 | Degradation of bacterial surface carbohydrates
by virus-associated enzymes |
| B. A. Dmitriev | 655 | Microbial O-antigenic hexosaminoglycans |
| N. Sharon, N. Firon and
I. Ofek | 671 | Oligomannoside units of cell surface gly-
coproteins as receptors for bacteria |
| T. J. Painter | 677 | Structural evolution of glycans in algae |
| O. Samuelson | 695 | Suppression of undesirable carbohydrate reac-
tions during oxygen bleaching of wood pulp |
| F. Shafizadeh | 705 | Saccharification of lignocellulosic materials |

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

- | | | |
|---|-----|---|
| Joint Commission on
Biochemical Nomenclature | 721 | Nomenclature of Retinoids (Provisional) |
|---|-----|---|

May

Invited and selected contributed lectures presented at the International Symposium on Interrelations Between Processing Structure and Properties of Polymeric Materials held at the National Technical University of Athens, Greece, 29 August-2 September 1982

- | | | |
|-----------------------------|-----|--|
| G. Astarita and L. Nicolais | 727 | Physics and mathematics of heat and mass
transfer in polymers |
|-----------------------------|-----|--|

R. A. Mashelkar and M. G. Kulkarni	737	Unified altered free volume state model for transport phenomena in polymeric media
P. L. Clegg	755	Collaborative research on polymeric materials through IUPAC
J. L. White	765	Structure development in polymer processing
A. J. Pennings, J. Smook, J. de Boer, S. Gogolewski and P. F. van Hutten	777	Process of preparation and properties of ultra-high strength polyethylene fibers
H. Janeschitz-Kriegl	799	A discussion of molecular orientation in plastics products
C. A. May	811	The chemical characterization and processing science of composites
M. Takayanagi	819	Polymer composites of rigid and flexible molecules
H. H. Kausch	833	The nature of defects and their role in large deformation and fracture of engineering thermoplastics
P. S. Theocaris and N. P. Andrianopoulos	845	Failure theories for glassy polymers: the T-criterion for various yield loci
P. S. Theocaris	853	Experimental studies of slow stable brittle crack-growth in polymethyl-methacrylate
J. L. Duda	861	Coupling of molecular diffusion and polymer processing
G. Capaccio	869	Structural changes in the preparation of ultra-high modulus polyethylene
A. R. Wedgewood and J. C. Seferis	873	Structural characterization of linear polyethylene by infrared spectroscopy
J. C. Halpin, J. L. Kardos and M. P. Dudukovic	893	Processing science: an approach for prepreg composite systems

June

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

Commission on Physico-chemical Measurements and Standards (J. P. Cali and K. N. Marsh)	907	An annotated bibliography on accuracy in measurement
Commission on Colloid and Surface Chemistry Including Catalysis (M. Kerker and J. P. Kratochvil)	931	Definitions, terminology and symbols in colloid and surface chemistry. Part 1.14: Light scattering (Provisional)

- | | | |
|---|------|--|
| Commission on Polymer Characterization and Properties
(H. H. Winter) | 943 | A collaborative study on the relation between film blowing performance and rheological properties of two low-density and two high-density polyethylene samples |
| Commission on Electroanalytical Chemistry
(Y. Marcus) | 977 | Thermodynamic functions of transfer of single ions from water to nonaqueous and mixed solvents: Part 1—Gibbs free energies of transfer to nonaqueous solvents |
| Commission on Atmospheric Environment
(K. Leichnetz) | 1023 | Proposal of methods for the determination of vinyl chloride and benzene in workplace atmospheres |
| Commission on Water Quality
(P. Grau, P. M. Sutton, S. Elmaleh, C. P. Grady, W. Gujer, M. Henze and J. Koller) | 1035 | Recommended notation for use in the description of biological wastewater treatment processes (Provisional) |
| Commission on Automation and Clinical Chemical Techniques
(M. Hjelm) | 1041 | Characteristics and attributes of instruments intended for automated analysis in clinical chemistry |

July

Invited lectures presented at the First International Conference on Bioinorganic Chemistry held at Florence, Italy, 13–17 June 1983

- | | | |
|---|------|---|
| M. Brunori, A. Colosimo and M. C. Silvestrini | 1049 | Regulation of electron transfer in metallo-proteins |
| J. Halpern | 1059 | Mechanistic aspects of coenzyme B ₁₂ -dependent rearrangements. Organometallics as free radical precursors |
| E. I. Solomon | 1069 | Electronic and geometric structure-function correlations of the coupled binuclear copper active site |
| R. J. P. Williams | 1089 | Inorganic elements in biological space and time |

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

- | | | |
|---|------|-------------------------------------|
| Commission on Atomic Weights and Isotopic Abundances
(N. E. Holden and R. L. Martin) | 1101 | Atomic weights of the elements 1981 |
|---|------|-------------------------------------|

Commission on Atomic
Weights and Isotopic
Abundances
(N. E. Holden, R. L. Martin
and I. L. Barnes)

1119 Isotopic compositions of the elements 1981

Commission on Analytical
Reactions and Reagents
(A. Hulanicki, S. Gląb
and G. Ackermann)

1137 Compleximetric indicators: characteristics and applications

Commission on Analytical
Radiochemistry and Nuclear
Materials
(M. Sankar Das and
B. L. Rao)

1231 Methods for the determination of fissile and fertile elements: basic data of interest for the spectrophotometric determination of thorium

Commission on Atmospheric
Environment
(K. Lechnitz)

1239 Generating test gases for calibration of methods used in environmental analysis

August

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

Commission on
Electrochemistry
(S. Trasatti and R. Parsons)

1251 Interphases in systems of conducting phases (Provisional)

Joint Commission on
Biochemical Nomenclature

1269 Symbols for specifying the conformation of polysaccharide chains (Provisional)

Joint Commission on
Biochemical Nomenclature

1273 Abbreviations and symbols for the description of conformations of polynucleotide chains (Provisional)

Commission on Physical
Organic Chemistry
(V. Gold)

1281 Glossary of terms used in physical organic chemistry

Commission on
Electroanalytical Chemistry
(T. Fujinaga, M. Senda and
K. Izutsu)

1373 Half-wave potentials of electroactive substances in hexamethylphosphoric triamide

Commission on Oils, Fats
and Derivatives
(H. Wessels)

1381 Results of a collaborative study on determination of polar compounds in frying fats

September

Plenary lectures presented at IMEBORON V: Fifth International Symposium on Boron Chemistry held at the University College of Swansea, Wales, UK, 11–15 July 1983

- | | | |
|---|------|---|
| H. C. Brown,
J. Chandrasekharan
and K. K. Wang | 1387 | Hydroboration—kinetics and mechanism |
| N. N. Greenwood | 1415 | Metalloboranes 1983 |
| W. N. Lipscomb | 1431 | Electron correlation effects in boron hydride structures, intermediates and reactions |
| B. M. Mikhailov | 1439 | The chemistry of 1-boraadamantane |
| H. Nöth, S. Weber,
B. Rasthofer, Ch. Narula
and A. Konstantinov | 1453 | Chemistry of dicoordinate and tricoordinate boron cations |

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

- | | | |
|--|------|---|
| Commission on Nomenclature
of Organic Chemistry
(N. Lozac'h) | 1463 | Extension of rules A-1.1 and A-2.5 concerning numerical terms used in organic chemical nomenclature (Provisional) |
| Commissions on
Electroanalytical Chemistry
and Electrochemistry
(A. K. Covington, R. G. Bates
and R. A. Durst) | 1467 | Definition of pH scales, standard reference values, measurement of pH and related terminology (Provisional) |
| Commission on Equilibrium
Data (D. G. Tuck) | 1477 | Critical survey of stability constants of complexes of indium |

October

Invited lectures presented at the 24th Microsymposium on Macromolecules 'Copolymers: Structure and Solution Properties' held in Prague, Czechoslovakia, 11–14 July 1983

- | | | |
|--------------------------|------|--|
| K. J. Ivin | 1529 | Characterization of copolymers by NMR spectroscopy |
| T. Fukuda and H. Inagaki | 1541 | Interactions between unlike polymers versus dilute solution properties of copolymers |
| G. Glöckner | 1553 | Characterization of copolymers by means of liquid chromatography |
| C. Price | 1563 | Micelle formation by block copolymers in organic solvents |
| J. E. McGrath | 1573 | Synthesis of block, graft, segmented and ion-containing copolymers |

Invited lectures presented at the 25th Microsymposium on Macromolecules 'Processing and Long-term Stabilities of Hydrocarbon Polymers' held in Prague, Czechoslovakia, 18-21 July 1983

- | | | |
|--|------|--|
| J. C. W. Chien and Ju-Li Fan | 1585 | Electron-proton and electron-methyl exchanges in pyrolysis of polyacetylene and polymethyl acetylene |
| J. Sohma | 1595 | Radical migration as an elementary process in degradation |
| J. Lemaire, R. Arnaud and J.-L. Gardette | 1603 | The role of hydroperoxides in photooxidation of polyolefins, polyamides and polyurethane elastomers |
| G. Scott | 1615 | Transformations of antioxidants during processing |
| K. Schwetlick | 1629 | Mechanisms of antioxidant action of organic phosphorus compounds |
| C. R. H. I. de Jonge | 1637 | Synergism of antioxidants |
| D. M. Wiles, J. P. Tovborg Jensen and D. J. Carlsson | 1651 | Polymer stabilization by hindered amines |
| V. Ya. Shlyapintokh | 1661 | Synergistic phenomena in polymer photo-stabilization |

November

Plenary lectures presented at the Second International Symposium on Organometallic Chemistry Directed Toward Organic Synthesis held in Dijon, France, 28 August-1 September 1983

- | | | |
|--|------|---|
| J.-E. Bäckvall | 1669 | Palladium-catalyzed oxidations in selective organic synthesis |
| G. Casnati, G. Casiraghi, A. Pochini, G. Sartori and R. Ungaro | 1677 | Template catalysis via non-transition metal complexes. New highly selective syntheses on phenol systems |
| K. H. Dötz | 1689 | Carbon-carbon bond formation via carbonyl-carbene complexes |
| I. Fleming and N. K. Terrett | 1707 | Some uses of silicon compounds in organic synthesis |
| M. Franck-Neumann | 1715 | Synthetic applications of some metal carbonyl complexes |

- | | | |
|---|------|---|
| K. A. Brown-Wensley,
S. L. Buchwald, L. Cannizzo,
L. Clawson, S. Ho,
D. Meinhardt, J. R. Stille,
D. Straus and R. H. Grubbs | 1733 | Cp ₂ TiCH ₂ complexes in synthetic applications |
| L. S. Hegedus | 1745 | Synthesis of β -lactams from chromium carbenes and imines |
| T. Mukaiyama | 1749 | Metal enolates in organic synthesis |
| A. Alexakis, A. Commerçon,
C. Coullentianos and
J. F. Normant | 1759 | Carbocupration of acetylenic acetals and ketals: synthesis of α - β ethylenic acetals, and of dienals and dienones |
| A. J. Pearson | 1767 | Natural products synthesis using organoiron complexes |
| P. Pino and G. Consiglio | 1781 | Organometallic catalysis in asymmetric synthesis |
| R. Scheffold, G. Rytz,
L. Walder, R. Orlinski
and Z. Chlmonczyk | 1791 | Formation of (C-C) bonds catalyzed by vitamin B ₁₂ |
| U. Schöllkopf | 1799 | Asymmetric syntheses of amino acids via metalated bis-lactim ethers of 2,5-diketopiperazines |
| D. Seebach, A. K. Beck,
M. Schiess, L. Widler
and A. Wonnacott | 1807 | Some recent advances in the use of titanium reagents for organic synthesis |
| K. B. Sharpless, S. S. Woodard
and M. G. Finn | 1823 | On the mechanism of titanium-tartrate catalyzed asymmetric epoxidation |
| V. I. Sokolov | 1837 | Asymmetric cyclopalladation as a tool of enantioselective synthesis |
| K. Utimoto | 1845 | Palladium catalyzed synthesis of heterocycles |
| H. Yamamoto and K. Maruoka | 1853 | Selective reactions using organoaluminum reagents |

December

Plenary and Keynote lectures presented at the 9th International Symposium on Microchemical Techniques 'Microchemical Techniques and Trace Analysis' held at the University of Amsterdam, Netherlands, 28 August-2 September 1983*

- | | | |
|------------------------------------|------|---|
| D. Luc Massart and
G. Hoogewijs | 1861 | The impact of chemometrics on microchemical analysis* |
| D. M. Hercules | 1869 | Organic mass spectrometry using the laser microprobe* |

E. Kozłowski	1887	Trends in elemental analysis of organic compounds*
J. A. F. de Silva	1905	Microanalysis of drugs and metabolites in biological fluids*
F. Adams	1925	Sampling and analysis of aerosols
K. Ballschmiter	1943	Sample treatment techniques for organic trace analysis
R. Dams	1957	Reference materials for trace analysis
J. D. van der Laarse and M. C. van Grondelle	1969	Experience with the analysis of coal
T. J. Rink	1977	Measurement of free calcium concentration in living cells
G. Tölg	1989	Role of sample decomposition and preconcentration in elemental trace analysis
B. G. M. Vandeginste	2007	Application of chemometrics
H. Werner	2017	Reference methods in ultra-trace analysis of milk products

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

Commission on Microchemical Techniques and Trace Analysis (M. Grasserbauer, K. F. J. Heinrich and G. H. Morrison)	2023	Nomenclature, symbols and units recommended for <i>in situ</i> microanalysis (Provisional)
Commission on Electroanalytical Chemistry (E. Pungor, K. Tóth, P. G. Klatsmányi and K. Izutsu)	2029	Applications of ion-selective electrodes in non-aqueous and mixed solvents
Commission on Food Chemistry (G. Grimmer)	2067	Recommended method for the gas chromatographic profile analysis of basic N-containing aromatic components (azaarenes) in high protein foods

Author Index

- ACKERMANN, G., 1137
 ADAMS, F., 1925
 ALCOCK, C. B., 529
 ALEXAKIS, A., 1759
 ALLINGER, N. L., 191
 ANDRIANOPOULOS, N. P., 845
 ARNAUD, R., 1603
 ASTARITA, G., 727
- BÄCKVALL, J.-E., 1669
 BALABAN, A. T., 199
 BALLSCHMITER, K., 1943
 BARNES, I. L., 1119
 BASILEVSKY, M. V., 207
 BATES, R. G., 1467
 BECK, A. K., 1807
 BECK, M. T., (ed), 1-176
 BEHRENS, C. H., 589
 BELLUCO, U., 47
 BERTINI, I., (ed), 1049-1100
 BLANDAMER, M. J., 55
 BOČA, R., 65
 BOCK, K., 605
 BOEF, G. den, 553
 BOER, J. de, 777
 BÖHM, M. C., 237
 BONACIĆ-KOUTECKÝ, V., 213, 315
 BONCHEV, D., 221
 BROWN, H. C., 1387
 BROWN-WENSLEY, K. A., 1733
 BRUNORI, M., 1049
 BUCHWALD, S. L., 1733
 BURGESS, J., 55
- CALI, J. P., 907
 CANNIZZO, L., 1733
 CAPACCIO, G., 869
 CARLSSON, D. J., 1651
 ČÁRSKY, P., 253
 CASIRAGHI, G., 1677
 CASNATI, G., 1677
 CHANDRASEKHARAN, J., 1387
 CHEN, E.-t., 283
 CHIEN, J. C. W., 1585
 CHILMONCZYK, Z., 1791
 CLAWSON, L., 1733
 CLEGG, P. L., 755
 COGSWELL, F. N., 177
 COLOSIMO, A., 1049
 COMMERÇON, A., 1759
 COMMISSION ON ANALYTICAL
 RADIOCHEMISTRY AND NUCLEAR
 MATERIALS, 1231
 COMMISSION ON ANALYTICAL REACTIONS
 AND REAGENTS, 553, 1137
 COMMISSION ON ATMOSPHERIC ENVIRONMENT,
 1023, 1239
 COMMISSION ON ATOMIC WEIGHTS AND
 ISOTOPIC ABUNDANCES, 1101, 1119
- COMMISSION ON AUTOMATION AND CLINICAL
 CHEMICAL TECHNIQUES, 1041
 COMMISSION ON COLLOID AND SURFACE
 CHEMISTRY INCLUDING CATALYSIS, 931
 COMMISSION ON ELECTROANALYTICAL CHEMISTRY,
 977, 1373, 2029
 COMMISSIONS ON ELECTROANALYTICAL
 CHEMISTRY AND ELECTROCHEMISTRY,
 1467
 COMMISSION ON ELECTROCHEMISTRY, 1251
 COMMISSION ON EQUILIBRIUM DATA, 1477
 COMMISSION ON FOOD CHEMISTRY, 2067
 COMMISSION ON MICROCHEMICAL TECHNIQUES
 AND TRACE ANALYSIS, 2023
 COMMISSION ON NOMENCLATURE OF ORGANIC
 CHEMISTRY, 409, 1463
 COMMISSION ON OILS, FATS AND
 DERIVATIVES, 1381
 COMMISSION ON PHYSICAL ORGANIC
 CHEMISTRY, 1281
 COMMISSION ON PHYSICOCHEMICAL
 MEASUREMENTS AND STANDARDS, 907
 COMMISSION ON POLYMER CHARACTERIZATION
 AND PROPERTIES, 177, 943
 COMMISSION ON TEACHING OF
 CLINICAL CHEMISTRY, 557
 COMMISSION ON WATER QUALITY, 1035
 CONSIGLIO, G., 1781
 COULENTIANOS, C., 1759
 COVINGTON, A. K., 1467
 CROCIANI, B., 47
 CURNOW, D. H., 557
- DAMS, R., 1957
 DE CLERCQ, E., 623
 DICK, B., 261
 DMITRIEV, B. A., 655
 DOBKOWSKI, J., 245
 DÖTZ, K. H., 1689
 DOWNING, J. W., 315
 DUDA, J. L., 861
 DUDUKOVIC, M. P., 893
 DURST, R. A., 1467
- ELMALEH, S., 1035
 EPIOTIS, N. D., 229
- FAN, JU-LI, 1585
 FERRIER, R. J., 565
 FINN, M. G., 1823
 FIRON, N., 671
 FLEMING, I., 1707
 FLETTERICK, R. J., 577
 FLORIANI, C., 1
 FORMICKA-KOZŁOWSKA, G., 107
 FRANCK-NEUMANN, M., 1715
 FUJII, Y., 269
 FUJINAGA, T., 1373
 FUKUDA, T., 1541

- GARDETTE, J.-L., 1603
 GAUNE-ESCARD, M., 505
 GAŽO, J., 65
 GEYER, H., 637
 GLAß, S., 1137
 GLEITER, R., 237
 GLÖCKNER, G., 1553
 GOGOLEWSKI, S., 777
 GOLD, V., 1281
 GOLDANSKII, V. I., 11
 GOLDSMITH, E., 577
 GRABOWSKI, Z. R., 245
 GRADY, C. P., 1035
 GRAOVAC, A., (ed), 191-408
 GRASSERBAUER, M., 2023
 GRAU, P., 1035
 GREENWOOD, N. N., 77, 1415
 GRIEPINK, B., (ed), 1861-2022
 GRIMMER, G., 2067
 GRONDELLE, M. C. van, 1969
 GRUBBS, R. H., 1733
 GUJER, W., 1035
 GÜSTEN, H., 289

 HAIM, A., 89
 HALPERN, J., 99, 1059
 HALPIN, J. C., 893
 HEGEDUS, L. S., 1745
 HEINRICH, K. F. J., 2023
 HENZE, M., 1035
 HEPLER, L. G., 493
 HERCULES, D. M., 1869
 HESS, B. A., JR., 253
 HIMMELSPACH, K., 637
 HJELM, M., 1041
 HO, S., 1733
 HOHLNEICHER, G., 261
 HOLDEN, N. E., 1101, 1119
 HOOGEWIJS, G., 1861
 HOSOYA, H., 269
 HOUK, K. N., 277
 HULANICKI, A., 553, 1137
 HUTTEN, P. F. van, 777

 INAGAKI, H., 1541
 IVIN, K. J., 1529
 IZUTSU, K., 1373, 2029

 JANESCHITZ-KRIEGL, H., 799
 JAWDOSIUK, M., 315
 JERICEVIĆ, Ž., 379
 JOINT COMMISSION ON BIOCHEMICAL
 NOMENCLATURE, 721, 1269, 1273
 JÓNA, E., 65
 JONGE, C. R. H. I. de, 1637

 KABEŠOVÁ, M., 65
 KARDOS, J. L., 893
 KATSUKI, T., 589
 KAUSCH, H. H., 833
 KERKER, M., 931
 KIANG, Y.-S., 283
 KLASINC, L., 289
 KLATSMÁNYI, P. G., 2029
 KLEIN, D. J., 299
 KNOBLER, C. M., 455
 KNOP, J. V., 379
 KOLLER, J., 1035
 KONSTANTINOV, A., 1453
 KOVAC, B., 289
 KOVACIC, P., 315
 KOZŁOWSKI, E., 1887
 KOZŁOWSKI, H., 107

 KRATOHVIL, J. P., 931
 KULKARNI, M. G., 737
 KWIATKOWSKI, B., 637

 LAARSE, J. D. van der, 1969
 LEE, A. W. M., 589
 LEICHNITZ, K., 1023, 1239
 LEMAIRE, J., 1603
 LEVELT SENGERS, J. M. H., 437
 LIPSCOMB, W. N., 1431
 LOZAC'H, N., 1463

 MACÁŠKOVÁ, L., 65
 MAKSIĆ, Z. B., 307
 MÄNSSON, M., 417
 MARCHESSAULT, R. H., (ed), 565-720
 MARCUS, Y., 977
 MARGERUM, D. W., 23
 MAROV, I. N., 115
 MARSH, K. N., 467, 907
 MARTELL, A. E., 125
 MARTIN, R. L., 1101, 1119
 MARTIN, V. S., 589
 MARUOKA, K., 1853
 MASHELKAR, R. A., 737
 MASSART, D. L., 1861
 MAY, C. A., 811
 McGLASHAN, M. L., (ed), 417-551
 McGRATH, J. E., 1573
 MEINHARDT, D., 1733
 MICHELIN, R., 47
 MICHL, J., 315
 MIKHAILOV, B. M., 1439
 MILLER, R. D., 315
 MORRISON, G. H., 2023
 MUKAIYAMA, T., 1749
 MÜLLER, W. R., 379
 MURATA, I., 323

 NARULA, CH., 1453
 NICOLAIS, L., 727
 NORMANT, J. F., 1759
 NÖTH, H., 1453

 OFEK, I., 671
 ORLINSKI, R., 1791

 PAINTER, T. J., 677
 PÁRKÁNYI, C., 331
 PARSONS, R., 1251
 PEARSON, A. J., 1767
 PELTER, A., (ed), 1387-1461
 PENNING, A. J., 777
 PETTIT, L. D., 107
 PINO, P., 1781
 POCHINI, A., 1677
 POPLER, J. K., 343
 PORTER, C. J., 557
 POWELL, W. H., 409
 PRASIT, P., 565
 PRICE, C., 1563
 PUNGOR, E., 2029

 RADZISZEWSKI, G. J., 315
 RAGUÉ SCHLEYER, P. von, 355
 RANDIĆ, M., 347
 RAO, B. L., 1231
 RASTHOFFER, B., 1453
 RICHARDS, G. N., iv (No.4)
 RINK, T. J., 1977
 RYTZ, G., 1791

 SAMUELSON, O., 695

SANKAR DAS, M., 1231
 SARTORI, G., 1677
 SCHAAD, L. J., 253
 SCHEFFOLD, R., 1791
 SCHIESS, M., 1807
 SCHLECHT, S., 637
 SCHLOSSER, M., (ed), 1669-1859
 SCHNEIDER, G. M., 479
 SCHÖLLKOPF, U., 1799
 SCHWETLICK, K., 1629
 SCOTT, G., 1615
 SCOTT, L. T., 363
 SCOZZAFAVA, A., (ed), 1049-1100
 SEDLÁČEK, B., (ed),
 1529-1581, 1585-1668
 SEEBACH, D., 1807
 SEFERIS, J. C., (ed), 727-906, 873
 SENDA, M., 1373
 SHAFIZADEH, F., 705
 SHARON, N., 671
 SHARPLESS, K. B., 589, 1823
 SHLYAPINTOKH, V. YA., 1661
 SHOBU, M., 269
 SIGEL, H., 137
 SILVA, J. A. F. de, 1905
 SILVESTRINI, M. C., 1049
 ŠIMA, J., 65
 SIMANDI, L. I., (ed), 1-176
 SMOOK, J., 777
 SOHMA, J., 1595
 SOKOLOV, V. I., 1837
 SOLOMON, E. I., 1069
 SPIRO, T. G., 145
 STANG, P. J., 369
 STILLE, J. R., 1733
 STIRM, S., 637
 STRAUS, D., 1733
 SUGA, H., 427
 SUNKO, D. E., 375
 SUTTON, P. M., 1035
 SZYMANSKI, K., 379

 TAKANO, K., 269
 TAKATANI, M., 589
 TAKAYANAGI, M., 819
 TANAKA, M., 151

TAQUI KHAN, M. M., 159
 TAUBE, R., 165
 TERNER, J., 145
 TERRETT, N. K., 1707
 THEOCARIS, P. S., (ed), 727-906,
 845, 853
 TIROUFLET, J., (ed), 1669-1859
 TÖLG, G., 1989
 TÓTH, K., 2029
 TOVBORG JENSEN, J. P., 1651
 TRASATTI, S., 1251
 TRINAJSTIĆ, N., (ed), 191-408, 379
 TUCK, D. G., 1477

 UGUAGLIATI, P., 47
 UNGARO, R., 1677
 UTIMOTO, K., 1845

 VANDEGINSTE, B. G. M., 2007
 VITI, S. M., 589

 WADSÖ, I., 515
 WALDER, L., 1791
 WALKER, F. H., 315
 WALKER, F. J., 589
 WANG, K. K., 1387
 WEBER, S., 1453
 WEDGEWOOD, A. R., 873
 WERNER, H., 2017
 WESSELS, H., 1381
 WESTRUM, E. F., JR, 539
 WHITE, J. L., 765
 WIBERG, K. B., 315
 WIDLER, L., 1807
 WILES, D. M., 1651
 WILLIAMS, R. J. P., 35, 1089
 WINTER, H. H., 943
 WONNACOTT, A., 1807
 WOODARD, S. S., 589, 1823

 YAMAMOTO, H., 1853
 YUH, Y. H., 191

 ZAHRADNÍK, R., 391
 ZOLLINGER, H., 401

Subject Index

R = Commission Report; 000-000 = inclusive page numbers of symposium/conference

Abbreviations for conformations of polynucleotide chains	1273R	Biological fluids, microanalysis of drugs in space and time, inorganic elements in wastewater treatment, notation in	1905
Accuracy in measurement, bibliography on	907R	Biothermodynamics and calorimetric methods	1089
Acenes, photoelectron spectra of	289	Bixbyite to Schottky and back again	1035R
Acrylic processing aids, influence on PVC structure	177R	Bonds, highly strained	515
Adenosine 5'-triphosphate, dephosphorylation of	137	l-Boraadamantane, chemistry of	539
Aerosols, sampling and analysis of	1925	Boron cations, di- and tri-coordinate chemistry, 5th International Symposium, Swansea, 1983	315
Algae, structural evolution of glycans in	677	hydride structures, electron correlation effects in	1439
Alkyl, nitrile, and isonitrile complexes of Pd(II) and Pt(II)	47	C-C bonds, formation of	1453
Alloy thermodynamics, solution models and patterns in	529	Calcium (free) concentration in living cells	1387-1461
Amines, hindered, Polymer stabilization by	1651	Calibration of methods in environmental analysis	1431
Amino acids, asymmetric syntheses of	1799	Calorimetric methods, biothermodynamics and	1689, 1791
Analysis of coal, experience with	1969	Carbanionic ligands, σ -bonded	1977
Antioxidant action of organic phosphorus compounds	1629	Carbenes, unsaturated, Properties and reactions	1239R
Antioxidants synergism of transformations during processing	1637	Carbocupration of acetylenic acetals and ketals	515
Antiviral activity of 5-substituted pyrimidine nucleoside analogues	1615	Carbohydrate(s) bacterial surface, degradation by enzymes	165
Applications of ion-selective electrodes	623	11th International Symposium, Vancouver, 1982	369
Aromatic components, basic N-containing, in high protein foods	2029R	reactions, suppression of undesirable symposia, history of	1759
photosubstitutions	331	Carbonyl-carbene complexes	iv(No.4)
Asymmetric catalysis by metal complexes	99	Characteristics of instruments for automated analysis in clinical chemistry	1677
cyclopalladation in synthesis	1837	Characterization and processing science of composites	1041R
epoxidation, Ti tartrate catalyzed	1823	of copolymers by liquid chromatography	811
syntheses of amino acids	1799	of copolymers by NMR	1553
synthesis, organometallic catalysts in	1781	Charge transfer transition	1529
Atmospheres, workplace, vinyl chloride and benzene in	1023R	Chemical thermodynamics, 12th International Conference, London, 1982	323
Atomic weights of elements 1981	1101R	Chemometrics application of impact on microchemical analysis	417-551
Automated analysis in clinical chemistry, characteristics of instruments for	1041R	Chiral 2,3-epoxy alcohols, stereo and regioselective openings of	2007
Azaarenes in high protein foods, analysis of	2067R	Clinical chemistry characteristics of instruments for automated analysis in two year postgraduate course in	1861
Azulenenes, quinones of	363	Coal, experience with analysis of	589
Bacterial surface carbohydrates, degradation of	637	Coenzyme B ₁₂ dependent rearrangements	1059
Basic N-containing aromatic components in high protein foods	2067R	Collaborative study on determination of polar compounds in frying fats	1381R
Benzene in workplace atmospheres, determination of	1023R		
Bibliography on accuracy in measurement	907R		
Bicyclo(6.2.0)decapentaene	191		
Bioinorganic chemistry, First International Conference, Florence, 1983	1049-1100		

Colloid and surface chemistry: definitions, terminology and symbols	931R	2,5-Diketopiperazines, metalated bis-lactim ethers of	1799
Complexes		Dilute solutions, thermodynamics of	493
dioxygen	125, 159	Dimerization and intramolecular association	355
kinetics of reactions of	55	Dioxygen complexes of ruthenium	159
metal, asymmetric catalysis by	99	Disordered systems, ordering processes in	427
metal peptide	23	Drugs in biological fluids, microanalysis of	1905
of indium, stability constants of	1477R		
problems of mutual influence of ligands in	65	Elastomers, role of hydroperoxides in photooxidation of	1603
Compleximetric indicators: characteristics and applications	1137R	Electroactive substances, half-wave potentials of, in HMPA	1373R
Composite systems, prepreg	893	Electrodes, ion-selective, Applications of	2029R
Composites		Electron	
chemical characterization and processing science of	811	correlation effects in boron hydride structures	1431
polymer, of rigid and flexible molecules	819	density, bond order, and aromaticity	269
Computer generation of isomeric structures	379	- methyl exchanges in pyrolysis of polyacetylenes	1585
Conducting phases, interphases in systems of	1251R	- proton exchanges in pyrolysis of polyacetylenes	1585
Conformation(s) of		transfer in metalloproteins, regulation of	1049
oligosaccharides	605	Electronic and geometric structure-function correlations	1069
polynucleotide chains, abbreviations & symbols for	1273R	Electrophilic and nucleophilic attacks on complexes of Pd(II) & Pt(II)	47
polysaccharide chains, symbols for	1269R	Elemental	
Conjugated hydrocarbons, valence bond theory for	299	analysis of organic compounds	1887
Coordination chemistry, 22nd International Conference, Budapest, 1982	1-176	trace analysis, sample decomposition and preconcentration in	1989
Copolymers		Elements	
block, micelle formation by	1563	Atomic weights of	1101R
synthesis of	1573	Isotopic compositions of	1119R
characterization		Enantioselective synthesis, asymmetric cyclopalladation in	1837
by liquid chromatography	1553	Engineering thermoplastics, nature of defects, deformation and fracture	833
by NMR	1529	Environmental analysis, generating test gases for	1239R
dilute solution properties of	1541	Enzymes, virus-associated	637
graft, synthesis of	1573	Equation-of-state measurements	455
ion-containing, synthesis of	1573	Equatorial-axial interactions	65
segmented, synthesis of	1573	Equilibria	
structure and solution properties, 24th Microsymposium, Prague, 1983	1529-1581	and rates, quantum chemical studies of ligand exchange reactions	391
Coupled binuclear Cu active site, structure-function correlations	1069	α - β ethylenic acetals, synthesis of	1759
Coupling of molecular diffusion and polymer processing	861	Extension of rules A-1.1 and A-2.5 concerning numerical terms used in organic chemical nomenclature	1463R
Covalent bonding, a simple model of	307		
Cp ₂ TiCH ₂ complexes in synthetic applications	1733	Fats, frying, Determination of polar compounds in	1381R
Critical		Film blowing performance and rheological properties, relation between	943R
state of fluids	437	Fissile and fertile elements, determination of	1231R
survey of stability constants of complexes of indium	1477R	Fluid(s)	
Definition(s)		mixtures at high pressures	479
pH scales, standard reference values, measurement of pH, etc. terminology and symbols in colloid and surface chemistry: light scattering	1467R 931R	state of the critical state of	437
Deformation and fracture of engineering thermoplastics	833	Free radical precursors, organometallics as	1059
Degradation, radical migration as elementary process in	1595		
Dianions, double bridging in	355		
Dicoordinate boron cations, chemistry of	1453		
Diels-Alder reactions, Regio- and stereoselectivity in	237		

Gas chromatographic profile analysis of basic N-containing aromatic components (azaarenes) in high protein foods	2067R	Kekule valence structures, role of	347
Generating test gases	1239R	Kinetic resolutions, unusual	589
Gibbs free energies of transfer to nonaqueous solvents	977R	Kinetics	
Glassy polymers, failure theories for	845	and mechanism of hydroboration	1387
Glossary of terms used in physical organic chemistry	1281R	of fast charge and spin relaxation	
Glycans, Structural evolution of, in algae	677	of coordination compounds	11
Glycoproteins, oligomannoside units of cell surface	671	of ligand exchange reactions	115
		of metalloporphyrin formation	151
		of reactions of complexes, solvent and pressure effects	55
Half-wave potentials of electroactive substances in HMPA	1373R	β -Lactams from chromium carbenes and imines, synthesis of	1745
Hantzsch-Widman system of nomenclature for heteromonocycles	409R	Laser microprobe, organic mass spectrometry using	1869
Hard sphere exo-anomeric calculations, to infer conformation of oligosaccharides	605	Ligand exchange reactions of coordination compounds	115
Heat		Ligands, carbanionic	165
and mass transfer in polymers	727	Light scattering: Definitions, terminology and symbols	931R
- capacity curves, morphology of	539	Lignocellulosic materials, saccharification of	705
Heme protein structure and dynamics	145	Liquid mixtures, thermodynamics of	467
Heterocycles, Pd catalyzed synthesis of	1845	Lithium synthetic reagents	355
Heteromonocycles, Hantzsch-Widman system of nomenclature for	409R	Living cells, measurement of free Ca concentration in	1977
Hexosaminoglycans, microbial O-antigenic	655	Mass transfer in polymers	727
High resolution NMR, to infer conformation of oligosaccharides	605	Measurement, accuracy in, Annotated bibliography	907R
Highly strained single and double bonds	315	Mechanistic investigations on reactions of N_2 with organic species	401
HMPA, half-wave potentials of electroactive substances in	1373R	Metabolites in biological fluids, microanalysis of	1905
HOMO-LUMO separation, evaluation of	283	Metal	
Hydroboration - kinetics and mechanism	1387	carbonyl complexes, synthetic applications	1715
Hydrocarbon polymers, processing and long-term stabilities of, 25th Microsymposium, Prague, 1983	1585-1668	centers, interaction of small molecules with	1
Hydroperoxides in photooxidation, role of	1603	enolates in organic synthesis	1749
		ion and protein chemistry, symbiosis of	35
Identification of unusual organic molecules	253	ion assisted mechanism	151
<i>In situ</i> microanalysis, Nomenclature, symbols and units recommended for	2023R	ion interaction with natural oligopeptides	107
Indicators, compleximetric	1137R	ion promoted dephosphorylation	137
Indium complexes, stability constants of	1477R	peptide complexes	23
Inorganic elements in biological space and time	1089	Metalated bis-lactim ethers of 2,5-diketopiperazines	1799
Instruments intended for automated analysis, Characteristics of	1041R	Metalloborane cluster compounds	77
Interaction(s)		Metalloboranes 1983	1415
between unlike polymers	1541	Metalloporphyrin formation, kinetics of	151
of small molecules with metal centers	1	Metalloproteins, regulation of electron transfer in	1049
Intermolecular forces	455	Micelle formation by block copolymers	1563
Interphases in systems of conducting phases	1251R	Microanalysis	
Intramolecular electron transfer	89	nomenclature, symbols and units for <i>in situ</i>	2023R
Ion-selective electrodes in nonaqueous and mixed solvents, Applications of	2029R	of drugs and metabolites in biological fluids	1905
Ions, single, Thermodynamic functions of transfer of	977R	Microbial O-antigenic hexosaminoglycans	655
Isomeric structures, computer generation of	379	Microchemical	
Isotopic compositions of elements 1981	1119R	analysis, impact of chemometrics on techniques and trace analysis, 9th International Symposium, Amsterdam, 1983	1861-2022
		Milk products, reference methods in ultra-trace analysis of	2017
		Modeling studies, role of	1

Molecular			
diffusion and polymer processing	861	Pd(II) & Pt(II) complexes, electro-	47
excited states, on avoided		philic and nucleophilic attacks on	
crossing between	213	pH	
orbital-valence bond theory	229	measurement and terminology	1467R
orientation in plastics products	799	scales, definition of	1467R
Molten salt mixtures, thermodynamic		Phenol systems, highly selective	
models of	505	syntheses on	1677
Morphology of heat-capacity curves	539	Phosphorus compounds, organic,	
Mössbauer emission spectroscopy,		antioxidant action of	1629
kinetics of fast charge and spin		Photochemical implications of	
relaxation by	11	avoided crossing between molecular	
		excited states	213
Natural products synthesis using		Photoelectron spectra of acenes	289
organoiron complexes	1767	Photooxidation	
Nitrogen, reactions of, with		of polyolefins, polyamides and	
organic species	401	polyurethane elastomers	1603
Nomenclature		role of hydroperoxides in	1603
for heteromonocycles	409R	Photosubstitutions, aromatic	331
novel, of organic compounds	221	Physical organic chemistry, glossary	
of retinoids	721R	of terms used in	1281R
organic, numerical terms in	1463R	Plastics products, molecular	
symbols and units recommended for		orientation in	799
<i>in situ</i> microanalysis	2023R	Polar compounds in frying fats,	
Notation for use in biological		determination of	1381R
wastewater treatment processes	1035R	Polyacetylenes, electron-proton	
Numerical terms in organic		exchanges in pyrolysis of	1585
nomenclature	1463R	Polyethylene	
		fibers, ultra-high strength	777
Oligomannoside units of cell		linear, structural	
surface glycoproteins	671	characterization by i.r.	873
Oligopeptides, natural, Metal ion		samples, relations between film	
interaction with	107	blowing performance and	
Oligosaccharide(s)		rheological properties of	943R
conformation and protein		ultra-high modulus, structural	
saccharide interactions	577	changes in preparation of	869
in solution, conformation of	605	Polymer	
Optically pure natural products		composites of rigid and flexible	
and drugs	589	molecules	819
Ordering processes in disordered		photo-stabilization, synergistic	
systems	427	phenomena in	1661
Organic		processing, coupling of molecular	
chemistry, theory in teaching	375	diffusion and	861
compounds, elemental analysis of	1887	structural development in	765
mass spectrometry using laser		stabilization by hindered amines	1651
microprobe	1869	Polymeric	
substrates, oxidation with		materials, Collaborative research,	
dioxygen complexes	125	through IUPAC	755
synthesis, metal enolates in	1749	media, transport phenomena in	737
Pd-catalyzed oxidations in	1669	Polymers	
Ti reagents for	1807	glassy, failure theories for	845
uses of Si compounds in	1707	heat and mass transfer in	727
trace analysis, sample treatment		interactions between unlike	1541
techniques for	1943	Polymethyl-methacrylate, slow stable	
Organo-		brittle crack-growth in	853
aluminum reagents, reactions using	1853	Polynucleotide chains, abbreviations	
iron complexes, natural products		and symbols for conformations of	1273R
synthesis using	1767	Polyolefins, polyamides and	
metallic catalysis in asymmetric		polyurethane elastomers,	
synthesis	1781	photooxidation of	1603
metallic chemistry directed toward		Polysaccharide chains, symbols for	
organic synthesis, 2nd		specifying conformation of	1269R
International Symposium,		Postgraduate course in clinical	
Dijon, 1983	1669-1859	chemistry	557R
metallics as free radical precursors	1059	Preconcentration in elemental trace	
Oxidation of organic substrates		analysis	1989
with dioxygen complexes	125	Prepreg composite systems	893
Palladium-catalyzed		Processing	
oxidations in selective organic		science of composites	811
synthesis	1669	prepreg composite systems	893
synthesis of heterocycles	1845	structure and properties of polymeric	
		materials, Interrelations between,	
		International Symposium,	
		Athens, 1982	727-906

Prostaglandins from sugars	565	Symbiosis of metal ion and protein chemistry	11
Protein		Symbols for conformation of polynucleotide chains	1273R
foods, analysis of basic N-containing aromatic components in saccharide interactions	2067R	polysaccharide chains	1269R
PVC, rheology and structure	577	Symmetry-forbidden charge transfer interaction	323
Pyrimidine nucleoside analogues, antiviral activity of	177R	Synergism of antioxidants	1637
Pyrolysis of polyacetylenes	623	Synergistic phenomena in polymer photo-stabilization	1661
	1585	Syntheses	
Quantum chemical studies of equilibria and rates	391	highly selective, on phenol systems	1677
Quinones of azulene	363	of copolymers	1573
		of α - β ethylenic acetals, dienals and dienones	1759
Radical migration as elementary process in degradation	1595	of heterocycles, Pd catalyzed	1845
Rearrangements, simple	343	of β -lactams	1745
Recommendations for usage of selective & selectivity in analytical chemistry	553R	Synthetic applications	
Reference		Cp ₂ TiCH ₂ complexes in	1733
materials for trace analysis	1957	of methyl carbonyl complexes	1715
methods in ultra-trace analysis of milk products	2017	T-criterion for various yield loci	845
Regio- and stereoselectivity in Diels-Alder reactions	237	Teaching organic chemistry	375
Retinoids, nomenclature of	721R	Template catalysis via non-transition metal complexes	1677
Rheological properties, relation between film blowing performance and	943R	Theoretical	
Rheology and structure of PVC	177R	organic chemistry, International Symposium, Dubrovnik, 1982	191-408
Ruthenium, dioxygen complexes of	159	vibrational spectra in identification of organic molecules	253
		Thermochemistry, recent developments	417
Saccharification of lignocellulosic materials	705	Thermodynamic(s)	
Sample		functions of transfer of single ions	977R
decomposition in elemental trace analysis	1989	models of molten salt mixtures	505
treatment techniques for organic trace analysis	1943	of dilute solutions	493
Sampling and analysis of aerosols	1925	of liquid mixtures	467
Schottky		solution models and patterns in alloy	529
contributions for chemists	539	Thermoplastics, deformation and structure of	833
from bixbyite to	539	Thorium, spectrophotometric determination of	1231R
Selective		Titanium	
reactions using organoaluminum reagents	1853	reagents for organic synthesis	1807
selectivity and related terms, usage of	553R	- tartrate catalyzed asymmetric epoxidation	1823
Silicon compounds in organic synthesis, uses of	1707	Topography of potential energy surfaces	207
Simple rearrangements, potential surfaces for	343	Topological	
Slow stable brittle crack-growth in polymethyl-methacrylate	853	distances in molecular graphs	199
Solution models in alloy thermodynamics	529	indices	199
Spectrophotometric determination of Th	1231R	Trace analysis	
Stability constants of complexes of indium	1477R	elemental, role of sample decomposition and preconcentration in organic, sample treatment	1989
Standard reference values in pH	1467R	techniques for	1943
Statistical thermodynamic studies of equilibria and rates	391	reference materials for	1957
Stereo and regioselective openings of chiral 2,3-epoxy alcohols	589	Transport phenomena in polymeric media	737
Stereoselectivities of organic reactions	277	Tricoordinate boron cations, chemistry of	1453
Structural characterization of linear polyethylene by i.r.	873	Twisted intramolecular charge transfer excited states	245
Structure-function correlations of coupled binuclear Cu active site	1069	Twist cup and lip	455
Sugars, prostaglandins from	565	Two-photon spectroscopy	261
Suppression of undesirable carbohydrate reactions	695	Ultra-	
		high modulus polyethylene	869
		high strength polyethylene fibers	777
		trace analysis of milk products	2017
		Unified altered free volume state model	737
		Uridine 5'-triphosphate, metal ion promoted dephosphorylation	137

Valence bond theory for conjugated hydrocarbons	299	Vitamin B ₁₂ , formation of (C-C) bonds catalyzed by	1791
Variable hybridisation	307	Wood pulp, oxygen bleaching of	695
Vinyl chloride in workplace atmospheres, determination of	1023R		